

# Vanishing theta nulls for algebraic curves with automorphisms.

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## Abstract

Let  $\mathcal{X}_g$  be an irreducible, smooth, projective curve of genus  $g \geq 3$ , defined over the complex field. We denote by  $\mathcal{M}_g$  the coarse moduli space of smooth curves of genus  $g$  and by  $\text{Aut}(\mathcal{X}_g)$  the automorphism group of  $\mathcal{X}_g$ . Each group  $G \leq \text{Aut}(\mathcal{X}_g)$  acts faithfully on the  $g$ -dimensional vector space of holomorphic differential forms on  $\mathcal{X}_g$ .

The locus of curves in  $\mathcal{M}_g$  with fixed automorphism group consists of finitely many components; to determine their number requires mapping class group action on generating systems. We denote by  $\mathcal{M}_g(G, \sigma)$  be the sublocus in  $\mathcal{M}_g$  of all the genus  $g$  curves  $\mathcal{X}$  with  $G \hookrightarrow \text{Aut}(\mathcal{X})$  and signature  $\sigma$ . The main goal of this talk is to describe the loci  $\mathcal{M}_g(G, \sigma)$  in terms of the theta nulls for any given  $g$ ,  $G$ , and  $\sigma$ .

## References

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